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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/671,435

09/24/2003

Robert H. Kelley-Wickemeyer

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EXAMINER

SWIATEK, ROBERT P

ART UNIT

PAPER NUMBER

3643

MAIL DATE

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02/19/2009

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/671,435

Applicant(s)

KELLEY-WICKEMEYER ET AL.

Examiner

Rob Swiatek

Art Unit

3643

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 September 2003.
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-78 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☒ Claim(s) 1-12 is/are allowed.
6) ☒ Claim(s) 13-78 is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/ISD)
Paper No(s)/Mail Date 9-24-03 et al.
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____

DETAILED ACTION

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 13-18, 23, 24, 26-37, 40-64 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sweeney et al. (US 3,790,106). The Sweeney et al. wing flap system (see Figures 2, 3) includes forward airfoil element 11 in the form of a wing whose upper, aft edge overlaps a forward portion of aft airfoil element 12, 18. The extent of overlap is approximately three percent of the combined chord length of the two elements, although the precise amount of overlap is not seen as possessing criticality and would have been obvious to one skilled in the art seeking to predictably augment aircraft control. A gap exists between the forward and aft airfoil elements (note column 6, lines 50, 51, of Sweeney et al.) such that some of the air flowing over the lower surface (underside) of the forward airfoil element 11 is diverted through the gap to flow over the upper surface of the aft airfoil element. Airfoil element 11 includes forward and aft spars 15, 16, which define a structural wing box. As to claims 26, 49, 60, a second slot located rearwardly of the first slot is formed within aft airfoil element 18 of Sweeney et al., as seen in Figures 2-4, and constitutes the boundary between leading edge portion 19 of element 18 and trailing edge portion 20. With regard to claims 13, 27, 32, 45, 55, 62, use of relatively unswept wings 10, 11 with Sweeney et al. formed of a composite material would have been

obvious to one skilled in the art in order to predictably increase the range of the aircraft and reduce weight respectively. The wings of the Sweeney et al. aircraft are otherwise considered to be “configured” for transonic speed inasmuch as they could be employed in conjunction with power plants capable of producing near-supersonic speeds. With respect to claims 23, 24, 40, 41, 47, 48, 52, 58, 59, the spanwise extent of the slot in each of the wings of Sweeney et al. and its fore to aft positioning also would have been obvious to one skilled in the art in order to achieve predicted optimization of wing lift capacity and speed for a particular aircraft.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 13, 20-22, 25, 32, 38, 39 are rejected under 35 U.S.C. 102(b) as being anticipated by Razak (US 3,362,659). Figure 1 of the Razak patent discloses an aircraft with a single, overhead, unitary wing. The wing contains a forward spar (unnumbered, but seen in Figure 4 adjacent the lower, left-hand end of cylinder 75) and an aft spar (unnumbered, but seen in Figure 4 as forming the left-hand, vertical wall of duct 31 and through which cylinder 75 extends); the spars are seen to pass under the engine structure. A slot exists between the leading edge of flap 29 and aft edge of the wing 21—seen particularly well in Figure 5—such that in flight some of the air flowing along the lower surface of wing 21 would be diverted to pass upwardly through the slot and around the leading edge of the flap 29 to join with air emanating from an outlet slot 33.

Claims 65-78 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sweeney et al. The Sweeney et al. wing flap system includes the components recited above; attached landing gear is considered to be inherent to the aircraft possessing the wing flap system. As to claim 65, although the extent of overlap appears to be about three percent of the combined chord length of the airfoil elements 11, 12, 18, the precise amount of overlap is not seen as possessing criticality and would have been obvious to one skilled in the art seeking to predictably augment aircraft control. Likewise, as to claims 67, 70, 71, 72, 74, 77, 78, use of relatively unswept wings 10, 11 with Sweeney et al., the spanwise extent of the slot in each of the wings, and the slots' fore to aft positioning also would have been obvious to one skilled in the art in order to predictably increase the range of the aircraft, achieve predicted optimization of wing lift capacity of the aircraft, and augment speed respectively.

Claims 13-41, 47, 48, 58, 59, 62-64, 70, 71, 77, 78 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. In claims 13, 32, 62, recitation of at least one wing and at least one spar as having "a sweep angle of up to about ten degrees" was not disclosed in the application as originally filed and is considered to constitute new matter; recitation in claims 23, 24, 40, 41, 47, 48, 58, 59, 63, 64, 70, 71, 77, 78 of the slot extending over less than or at least approximately the full span of the aircraft wing is deemed to be new matter.

Claims 14, 18, 19, 34, 35, 38, 64 rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which

applicant regards as the invention. With respect to claims 14, 18, 19, 34, 35, 38, it is unclear how the at least one wing can have a sweep angle of about 10 degrees (see, e.g., claim 13, lines 3, 4) while being "approximately unswept," as recited in, for example, dependent claim 14. The statements are mutually incompatible. Likewise, it is unclear how any spar could extend in a straight line from one side of the fuselage to the other (or be unswept) if the wing is swept at 10 degrees. Claim 64 is a duplicate of claim 59.

Claim 78 is objected to because of the following informalities: in line 2, "at" should be changed to -of-. Appropriate correction is required.

Claim 19 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

The patents to Hawkins (US 2,421,694) and Grieb (US 3,887,147) have been cited to provide additional examples of aircraft control surfaces.

/Rob Swiatek/

Primary Examiner, Art Unit 3643

Ph.: 571/272-6894
9 February 2009